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U. S. DEPARTMENT OF COMMERCE  
NATIONAL BUREAU OF STANDARDS

ADDRESS REPLY TO  
NATIONAL BUREAU OF STANDARDS  
WASHINGTON 25, D. C.

August 2, 1963

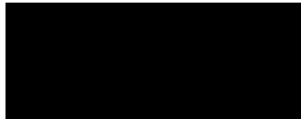
IN YOUR REPLY  
REFER TO FILE NO.

2.3

STATINTL

**DOC Declassification/Release Instructions on File**

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This is in response to your request for proposals in the general field of studies in microdensitometry. The Photographic Research Section of the National Bureau of Standards is prepared to undertake a study of methods of calibrating and evaluating microdensitometers. This study could be conducted and completed in the next year and the cost is estimated to be [REDACTED]

STATINTL

Appropriate physical standards would be prepared to permit calibration of the translational scale of microdensitometers. Such standards would be of the form of stage micrometers with graduated scales of known spacing.

Appropriate physical standards, bearing repetitive patterns would be prepared for the study of the resolution of microdensitometers. Patterns having spatial frequencies up to 1,000 lines per millimeter would be prepared. Patterns with spatial frequencies as high as 2,000 lines per millimeter would be prepared, if possible, but the modulation would not be as high as it would be at the lower frequencies.

An experimental study of methods of densitometry would be made to determine the most meaningful and reliable means of calibrating step tablets to be used, in turn, to calibrate microdensitometers. The photometric geometry employed in the American Standard Method for measuring diffuse transmission density is so dissimilar to the photometric geometry ordinarily employed in microdensitometry that it is to be expected that a different fundamental definition of density would be adopted. It would be necessary to construct special experimental densitometric equipment for this study. The effect of photometric geometry on such calibration procedures would be studied with regard to modern photographic materials of particular interest to the sponsor.

A general survey of methods of microdensitometric calibration in use throughout the world would be made.

**Declass Review by NIMA / DoD**

The sponsoring agency would receive: (a) a report outlining methods of calibration in use today, the recommended procedures for calibration, and recommended procedures for the use of physical standards in the evaluation of microdensitometers, and (b) appropriate physical standards for calibrating the translational scale, evaluating the resolution, and other recommendations for the design of a special densitometer for the calibration of step tablets for this purpose, if that is found desirable, or physical standards for the calibration and evaluation of microdensitometers. No densitometer would be supplied under this proposal.

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Sincerely yours,

[REDACTED]  
[REDACTED] Research Section,  
Technology Division

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(When Filled In)

## TECHNICAL BACKGROUND PROCUREMENT INFORMATION

## I. Contractor

A. Name and address: National Bureau of Standards  
Washington 25, D. C.

B. Evaluation of previous performance: Satisfactory

II. Brief description of this procurement: Study of methods of calibrating and evaluating microdensitometers

Estimated total amt. [REDACTED]

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A. Deliverable items: (1) Report outlining methods of calibration and procedures,  
(2) Appropriate physical standards for calibrating translational scale and evaluating resolution.

B. Is this procurement for other than a standard, "off the shelf" or slightly modified commercial item? Yes If "yes", is it anticipated that any more of this unit will be procured? No If so, a complete set of directly reproducible manufacturing drawings and specifications would normally be included in this procurement. Comments: \_\_\_\_\_

C. Will contract cover a period of more than 90 days? Yes  
If "yes", are progress reports desired? Yes If so, indicate frequency, content and number of copies desired: \_\_\_\_\_

Monthly progress reports are required indicating progress of contract/expenditure in triplicate.

D. Is any Government-owned property to be provided to the contractor?

No If so, list and indicate its availability (where, when, etc.) \_\_\_\_\_

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E. Is any special tooling involved? Construction of special equipment is necessary.

F. Security:

1. Association with the Sponsor is Classified

2. The specifications and/or drawings are Not classified

3. The item is Not classified

4. Contractor personnel known to be aware of this proposed procurement:

Mr. C. S. McCamy

5. Other security information \_\_\_\_\_

III. Reasons for selection of this source. If other sources were considered, indicate results. If no other sources were considered, list the reasons why this firm is considered to be uniquely qualified to perform this work.

This agency, within the governmental structure, is primarily concerned with development of and evaluation of standards and will approach the subject from an objective viewpoint. Since this is the primary function of this organization, no other companies were surveyed for proposals.

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IV. Technical contact [REDACTED] 2610  
Name Telephone

In the event additional space is required, use the reverse side(s) of this form, with a reference to the item number to which the comment applies.

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